

R E M A R K S

Reconsideration of this application, as amended, is respectfully requested.

ALLOWABLE SUBJECT MATTER

The Examiner's indication of the allowability of the subject matter of claims 10-13, 25-28 and 40-43 is respectfully acknowledged.

New independent claims 46, 50 and 54 have been added to recite the subject matter of claims 10, 25 and 40 rewritten in independent form, in accordance with the language used in the specification. In addition, new claims 47-49, 51-53 and 55-57 have been added to recite the subject matter of claims 11-13, 26-28 and 41-43 respectively depending from new independent claims 46, 50 and 54.

New claims 46-57, moreover, have also been prepared to more clearly recite the allowable features of the present invention in better U.S. form.

No new matter has been added, and no new issues with respect to patentability have been raised.

Accordingly, it is respectfully requested that new claims 46-57 be approved and entered, and it is respectfully submitted that new independent claims 46, 50 and 54 and

claims 47-49, 51-53 and 55-57 respectively depending therefrom are now in condition for immediate allowance.

THE SPECIFICATION

The specification has been amended to correct a minor typographical error of which the undersigned has become aware, and the abstract has been amended to better comply with the requirements of MPEP 608.01(b), as required by the Examiner.

No new matter has been added, and it is respectfully requested that the amendments to the specification be approved and entered, and that the objection to the specification be withdrawn.

THE CLAIMS

Independent claim 1 has been amended to clarify the features of the present invention whereby the image forming material is thermally developable, whereby the developing device is a thermal developing device, and whereby the storing device stores characteristic change model data indicating a characteristic change of the thermal developing device over time after starting of operation of the image processing apparatus. See, for example, the disclosure in the specification at page 30, line 20 to page 31, line 15, page 36, line 3 to page 37, line 11, and Figs. 4, 5 and 7(b).

Independent claim 5 has been amended to clarify the features of the present invention whereby the image forming material is thermally developable, whereby the developing device is a thermal developing device, and whereby the storing device stores passage-time film characteristic model data indicating a change over time of a characteristic of the image forming material after loading of the image forming material in the image processing apparatus. See, for example, the disclosure in the specification at page 30, line 20 to page 31, line 15, page 42, lines 5-14, and Figs. 4, 11 and 12.

In addition, claim 14 has been amended to clarify the features of the present invention whereby the image forming material is thermally developable, whereby the developing device is a thermal developing device, whereby the first storing device stores characteristic change model data indicating changes over time of a characteristic of the thermal developing device after starting of operation of the image processing apparatus, and whereby the second storing device stores passage-time film characteristic model data indicating a change over time of a characteristic of the image forming material after loading of the image forming material in the image processing apparatus. See, for example, the disclosure in the specification at page 30, line 20 to page 31, line 15, page 48, line 1 to page 49, line 1 and Figs. 13-15.

Still further, independent method claims 16, 20 and 29, and independent computer program (recording medium) claims 31, 35 and 44 have been amended in a similar manner to apparatus claims 1, 5 and 14.

Finally, claims 1-45 have been amended to more clearly and positively recite the features of the present invention in better U.S. form. Various minor grammatical improvements have been made, and various minor antecedent basis problems have been corrected so as to put the claims in better form for issuance in a U.S. patent. The informalities pointed out by the Examiner have been corrected.

No new matter has been added, and it is respectfully requested that the amendments to claims 1-45 be approved and entered.

CLAIM FEE

The application was originally filed with 45 claims of which 9 were independent, and the appropriate claim fee was paid for such claims. The application now contains 57 claims, of which 12 are independent. Accordingly, a claim fee in the amount of \$1200.00 for the addition of 3 extra independent claims and 12 extra claims in total is attached hereto. In addition, authorization is hereby given to charge any additional fees which may be determined to be required to Account No. 06-1378.

THE PRIOR ART REJECTION

Claims 5 and 20 were rejected under 35 USC 102 as being anticipated by USP 6,297,873 ("Furuya"); claims 1, 4, 6, 7, 14, 16, 19, 21, 22 and 29 were rejected under 35 USC 103 as being obvious in view of the combination of Furuya and USP 5,083,154 ("Terashita et al"); and claims 2, 3, 8, 9, 15, 17, 18, 23, 24, 30-39, 44 and 45 were rejected under 35 USC 103 as being obvious in view of the combination of Furuya with one or more of Terashita et al, USP 6,624,876 ("Fukuda et al") and USP 6,616,262 ("Nakajima et al"). These rejections, however, are respectfully traversed with respect to the claims as amended hereinabove.

In a thermal developing type image processing apparatus, the temperature of the thermal developing section changes relatively rapidly, especially for during a period after the start-up of the apparatus, because of steps of warming-up of the related components. This causes a variation in image density as shown in Fig. 7(b), even when the same image signal is inputted to the exposing section, because the thermally developable image forming material used in the thermal developing type image processing apparatus is very sensitive to temperature variation.

In addition, heating components which generate high heat for development in the developing section (page 31 lines 4-9) strongly influence to the variation of the temperature not only in the developing section but also in other parts of the

apparatus (page 36 line 22 to page 37 line 2). The temperature rise in the apparatus also affects the image forming material stored in the apparatus as shown in Fig. 12.

Therefore, it is very important to correct for the variation of the image density caused by the influence of heat, especially for a while after the start-up of the apparatus compared to other types of image processing apparatuses such as a laser printer apparatus or a type of apparatus that forms images using developing solutions.

Therefore, if an image forming process is carried out right after the start-up of the apparatus, since the temperature of the thermal developing section changes relatively rapidly, the image formed on the thermally developable image forming material cannot be used until the temperature of the thermal developing section becomes stable. If the image forming process is delayed until after the temperature of the thermal developing section became stable, however, it is necessary to wait for a period during which the thermal developing type image processing apparatus can not be used. Generally, it takes a long time to stabilize the temperature of the developing section after start-up of the apparatus. Therefore, if image forming is delayed to wait for the temperature to be stable, users must wait for a long time, which is inconvenient and wastes time.

The inventors of the present invention found that there is an apparent characteristic rule in the temperature characteristics of the thermal developing section as time elapses. Furthermore, the inventors found that the image density characteristics can be anticipated and the variation of the characteristics can be sufficiently corrected by using model data in accordance with the rule.

Following from this, according to the claimed present invention the calibration table that is a result of calibrating the image processing apparatus can be corrected. As a result, the thermal developing type image processing apparatus can be used without waiting, even before the temperature of the thermal developing section becomes stable, and the convenience of the apparatus is highly increased. In addition, by employing the correction technique of the claimed present invention using the model data for the thermally developable image forming material, accuracy of the calibration is highly increased without increasing the number of calibration times.

The Examiner acknowledged that Furuya does not disclose storing a characteristic change model that indicates a characteristic change of an exposing or developing device over time.

Indeed, it is respectfully submitted that Furuya et al merely discloses calculating a correction value based a

difference in information obtained from prior calibrations (e.g. two calibrations 1 and 2. (See, for example, columns 10 and 11 of Furuya.)

Terashita et al, moreover, has been cited for the disclosure of offsetting the characteristic change with time of the exposing section and development section of an image forming apparatus.

It is respectfully submitted, however, that Terashita et al is directed to detecting changes in the exposing and development sections and performing control based on the detections.

And it is respectfully submitted that detecting changes is not the same as storing characteristic change model data indicating a characteristic change of the thermal developing device over time after starting of operation of the image processing apparatus and/or storing passage-time film characteristic model data indicating a change over time of a characteristic of the image forming material after loading of the image forming material in the image processing apparatus, whereby the stored model data is referred to calculate a density change from a time of preparation of a calibration table and to correct the table, as recited in amended independent claims 1, 5, 14, 16, 20, 29, 31, 35 and 44.

In view of the foregoing, it is respectfully submitted that the present invention as recited in amended independent claims 1, 5, 14, 16, 20, 29, 31, 35 and 44 and claims 2-4, 6-13, 15, 17-19,

21-28, 30, 32-34, 36-43 and 45 respectively depending therefrom, clearly patentably distinguishes over Furuya and Terashita et al, taken singly or in any combination with the other prior art of record, under 35 USC 102 as well as under 35 USC 103.

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Entry of this Amendment, allowance of the claims and the passing of this application to issue are respectfully solicited.

If the Examiner has any comments, questions, objections or recommendations, the Examiner is invited to telephone the undersigned at the telephone number given below for prompt action.

Respectfully submitted,

/Douglas Holtz/

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